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Preface

This manual is designed to assist users in setting up and using the LCD Monitor. Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice. This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic or other means, in any form, without prior written permission of the manufacturer.

FCC Statement Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the manufacturers may void the user's authority to operate this equipment.

NOTE

A shielded-type signal cord is required in order to meet the FCC emission limits and also to prevent interference to the radio and television reception. It is essential that only the supplied signal cord be used.

Canadian DOC Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B repecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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Important Safety Instructions

Please read the following instructions carefully. This manual should be retained for future use.

1. To clean LCD Monitor screen;
   -- Power off LCD Monitor and unplug the AC Cord.
   -- Spray a non-solvent cleaning solution onto a rag.
   -- Gently clean the screen with dampened rag.
2. Do not place the LCD Monitor near a window. Exposing the monitor to rain water, moisture or sunlight can severely damage it.
3. Do not apply pressure to the LCD screen. Excess pressure may cause permanent damage to the display.
4. Do not remove the cover or attempt to service this unit by yourself. Servicing of any nature should be performed by an authorized technician.
5. Store LCD Monitor in a room with a room temperature of -20° ~ 60°C (or -4° ~ 140°F). Storing the LCD Monitor outside this range could result in permanent damage.
6. If any of the following occurs, immediately unplug your monitor and call an authorized technician.
   * Monitor to PC signal cable is frayed or damaged.
   * Liquid spilled into LCD Monitor or the monitor has been exposed to rain.
   * LCD Monitor or the case is damaged.
7. A certified line is required to connect this device to a power outlet. For a nominal current up to 6A and a device weight above 3 kg, a line not lighter than H05VV-F, 3G, 0.75 mm^2 must be used.
8. For use only with power supply LINEARITY LAD6019AB5 and Li-shin, LSE9901B1260.

Chapter 1 Installation

Unpacking

Before unpacking the LCD Monitor, prepare a suitable workspace for your Monitor and computer. You need a stable and clean surface near a wall power outlet. Make sure that LCD Monitor has enough space around it for sufficient airflow. Though the LCD Monitor uses very little power, some ventilation is needed to ensure that the Monitor does not become too hot.

After you unpack the LCD Monitor, make sure that the following items were included in the box:

* LCD Monitor
* 1.8M Monitor-to-PC VGA Cable
* 1.8M Stereo Jack Audio Cable
* User's Manual
* 1.8M Power Cord

If you find that any of these items is missing or appears damaged, contact your dealer immediately.

Viewing Angle Adjustment

The LCD Monitor is designed to allow users to have a comfortable viewing angle. The viewing angle can be adjusted from -5°to +25°.(See fig. 1-1)& Left / Right -45° to +45°

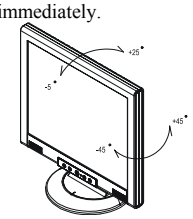

Figure 1-1

Warning: *Do not force the LCD Monitor over its maximum viewing angle settings as stated above. Attempting this will result in damaging the Monitor and Monitor stand.*

Detaching LCD Monitor from Its Stand

Unscrew screws ❶ the swivel base support column and pull down❷ the second.

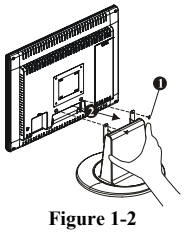

Figure 1-2

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Interface for Arm Applications

Before installing to mounting device, please refer to Fig.1-2.
The rear of this LCD display has four integrated 4 mm, 0.7 pitches threaded nuts, as well as four 5 mm access holes in the plastic covering as illustrated in Figure 1-3. These specifications meet the **VESA Flat Panel Monitor Physical Mounting Interface Standard** (paragraphs 2.1 and 2.1.3, version 1, dated 13 November 1997).

Note :Please using Ø 4mm x 8mm (L) screw for this application.

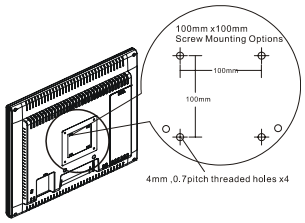

Figure 1-3

Cable Installation

Please follow these instructions to install the cables.
1. Remove the back panel ❶ from the rear of the monitor.(See Fig. 1-4)
2. Place the signal cable, the audio cable into their correct socket.

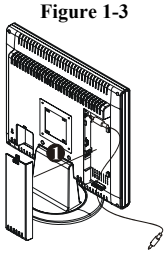

Figure 1-4

Connecting the Display to your Computer

1. Power off your computer.
2. Connect one end of the signal cable to the LCD Monitor's VGA port. (See Fig 1-5)
3. Connect the other end of the signal cable to the VGA port on your PC.
4. Make sure connections are secure.

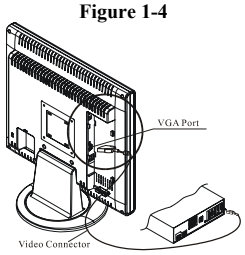

Figure 1-5

Attention: *This device must be connected to an off-the-shelf video cable in order to comply with FCC regulations. A ferrite-core interface cable is included in the LCD Monitor package.*
This device will not be in compliance with FCC regulations when a non-ferrite-core video cable is used.

Connecting the AC Power

1. Connect the power cord to the AC socket. (See Fig. 1-6)
2. Connect the power cord to an AC power source.

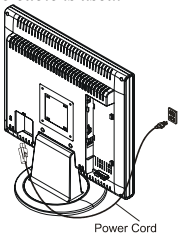

Figure 1-6

Connecting the Audio Cable

1. Connect the audio cable to the "LINE OUT " jack on your PC's audio card or to the front panel's "AUDIO OUT" jack of your CD ROM drive. (See Fig. 1-7)
2. Connect the other end of the audio cable to the LCD Monitor's "LINE IN" jack.

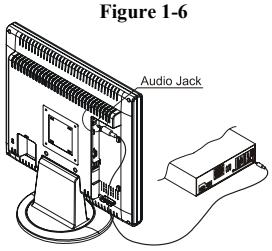

Figure 1-7

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Setting Up the LCD Monitor

1. Turn on the LCD monitor's hard power switch, located on the back of the monitor. (See Fig. 1-8)
2. Turn on the LCD Monitor's soft power switch, located on the bezel of the monitor.

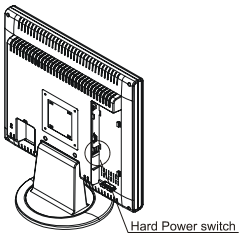

Figure 1-8

Power Management System

This LCD Monitor complies with the VESA DPMS (version 1.0) Power Management guidelines. The VESA DPMS provides four power saving modes through detecting a horizontal or vertical sync. signal.
When the LCD Monitor is in power saving mode, the monitor screen will be blank and the power LED indicator will light yellow.

Chapter 2 Display Controls

User Controls

A brief description and the location of all LCD Monitor functions control and indicator:

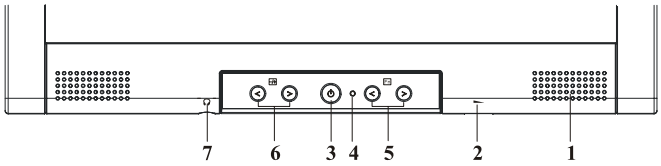

Figure 2-1

1	**Stereo Speakers**	PC Audio Stereo output.
2	**Speaker Volume Control**	Increase Volume - Turn the knob clock wise. Decrease Volume - Turn the knob counter clock wise.
3	**Soft Power Switch**	Press the soft power switch to switch the monitor ON/OFF.
4	**Power-On Indicator**	LED lights Green color --- Power is ON. LED lights Yellow --- Monitor is in "Power Saving Mode". LED is off --- Power is OFF.
5	**Function Select Buttons**	Press either left or right control button for OSD (On Screen Display) menu selection.
6	**Adjustment Control Buttons**	Press the left button to decrease the OSD setting and press the right button to increase the OSD setting.
7	**External Headphone Jack**	The monitor speakers will be disabled when using an external headphone or external speakers.

Adjusting the Monitor's Display

The monitor has four function control buttons to select among functions shown on OSD menu, designed for easy user-viewing environments.

OSD Function Menu

To access OSD Main menu, simply press one of the Function Select control buttons, and the menu diagram will pop up on the screen as shown on Fig. 2-2:
Continue pressing the Function Select buttons to scroll through the entire menu items, then press Adjustment Control buttons to adjust content of selected item.

Figure 2-2

Attention: *Firmware revision may have been updated into a latest version while the version number shown on all OSD menus in this manual will stay as Ver. 1.00.*

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Function Description

Icon	Function	Function Description
	Brightness	101 scales of brightness are available to choose from (0 to 100).
	Contrast	101 scales of contrast are available to choose from (0 to 100).
	H. Position	This function let's you adjust the display's horizontal position
	V. Position	This function let's you adjust the display's vertical position.
	Sharpness	This function let's you select the images sharpness. Five selections are available. A smoother setting is more suitable for pictures, while a sharper setting is more suitable for text.
	OSD Transparency	This function let's you set the transparency of the OSD menu. The transparency is adjustable from 0% to 10%. 11 scales are available.
	Phase	A total of 256 scales (0 to 255) are available to adjust the focus and clarity of the display.
	Clock	This function carries a frequency-tracking feature that offers users better stability and clarity. 101 scales (from -50 to +50) are available on the mode that is currently running. The adjustable range can be variable in different modes. This function records the deviated number of clock period between input timing and supported timing. The clock value may not be"0" after Auto Adjustment when the input timing is different from supported timing.
	Color Temperature	Push the ( ) button to select a different color temperature. Please see the diagram below for function and description.
	OSD H. Position	This function moves the OSD menu window horizontally.
	OSD V. Position	This function moves the OSD menu window vertically.
	Graph / Text	Because the H and V-Frequencies of both 640 x 400 70Hz, and 720 x 400 70Hz, are the same, this function let's you manually select either 640 x 400 (graphics mode), or 720 x 400 (text mode).
	Recall	The recall function will return all adjusted parameters to factory preset values.
	Language	Five OSD language options are available: English, German, French, Spanish, and Italian. Press the left or right adjustment control button to select other language.
	Auto	Press button ( ) to activate the Auto Adjustment. The Auto Adjustment function let you adjust the display size, clock and phase to obtain the best viewing settings. This process will take 3 ~ 5 seconds to complete. **Attention :** After Auto Adjustment, the display might display wrong position or size, if it has received a pattern which has no screen border.
	Exit	Saves the values of this setting and exits the OSD menu function.

Icon	Function	Description
9300	CIE coordinated Color Temperature of 9300°K	Sets the CIE coordinate color temperature to 9300°K
7500	CIE coordinated Color Temperature of 7500°K	Sets the CIE coordinate color temperature to 7500°K
6500	CIE coordinated Color Temperature of 6500°K	Sets the CIE coordinate color temperature to 6500°K
User	Three colors (Red, Green, Blue) can be	Sets the settings to a by user defined CIE

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	adjusted from the OSD menu	Temperature.

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Chapter 3 Technical Information

Specifications

LCD Panel	**Fujitsu**
Size	19" (48 cm)
Display Type	Active matrix color TFT LCD
Resolution	1280 x 1024
Display Dot	1280 x (RGB) x 1024
Display Area (mm)	376.32 x 301.056 (H x V)
Display Color	16.7M
Brightness	300 cd/m^2 (typical)
Contrast Ratio	700:1 (typical)
Response Time	Ta=25°C Tr=15ms Tf=10ms
Lamp Voltage	750 Vrms (typical)
Lamp Current	7.0 mA rms. (typical)
Viewing Angle	Vertical: -85° ~ +85° Horizontal: -85° ~ +85°

Video	
Input Signal	Analog RGB 0.7Vp-p
Input Impedance	75 Ohm ± 2%
Polarity	Positive, Negative
Amplitude	0 - 0.7 ± 0.05 Vp
Multi-mode Supported	Horizontal Frequency: 24 ~ 80 KHz Vertical Frequency: 56 ~ 75 Hz

Audio	
Input	500mVrms
Output	1W+1W

Control	
Power switch (hard and soft types)	On/Off switch with LED indicator

OSD	
Brightness	Digital
Contrast	Digital
Horizontal Position	Digital
Vertical Position	Digital
Phase	Digital
Clock	Digital
Display Mode Setup	Use EEPROM to save settings in memory
OSD Format	20 characters x 9 rows

Power Management

Mode	Power Consumption*	AC Input	LED Color
On	55W maximum	240 VAC	Green
Off	3W maximum	240 VAC	Yellow
Soft switch off	3W maximum	240 VAC	Dark
Disconnected	3W maximum	240 VAC	Yellow: Standby, Suspend, Off Dark: Power off
Hard switch off	1W maximum 1W maximum	100 VAC 240 VAC	Dark

* Meeting VESA DPMS requirements measured from AC Input.

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Sync Input

Signal	Separate TTL compatible horizontal and vertical synchronization
Polarity	Positive and negative

Plug & Play Supports VESA DDC2B functions

External Connection

Power Input (AC input)	1.8M power cord
Video Cable	1.8M with 15-pin D-sub connector
Audio Cable	1.8M with Stereo Jack

Environment

Operating Condition:	Temperature	5°C to 40°C/41°F to 104°F
	Relative Humidity	20% to 80%
Storage Condition:	Temperature	-20°C to 60° C/-4°F to140° F
	Relative Humidity	5% to 85%

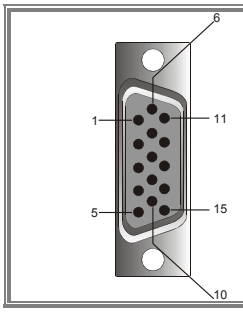
Power Supply (AC Input)

Input Voltage	Single phase, 100 ~ 240VAC, 50 / 60 Hz
Input Current	1.2 A maximum

Size and Weight

Dimensions	433 (W) x 447 (H) x 235 (D) mm
Net Weight	7.0 ± 0.3 kg
Gross Weight	9.0 ± 0.3 kg

Pin Assignment



Signal		Signal	
PIN	*Description*	*PIN*	*Description*
1	Red	9	+5V
2	Green	10	Hot Plug Detect
3	Blue	11	NC
4	Digital GND	12	SDA
5	Digital GND	13	H. Sync.
6	Red Rtn	14	V. Sync.
7	Green Rtn	15	SCL
8	Blue Rtn		

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Standard Timing Table

If the selected timing is NOT included in table below, this LCD monitor will use the most suitable available timing.

Resolution	H. Freq. (KHz)	V. Freq. (Hz)	Pixel Freq. (MHz)	H/V Sync. Polarity	Mode
640 x 350	31.469	70.087	25.175	+/-	VGA-350
640 x 400	24.830	56.420	21.050	-/-	NEC PC9801
640 x 400	31.469	70.087	25.175	-/+	VGA-400-GRAPH
640 x 400	31.50	70.15	25.197	-/-	NEC PC9821
640 x 480	31.469	59.940	25.175	-/-	VGA-480
640 x 480	35.00	66.67	30.24	-/-	APPLE MAC-480
640 x 480	37.861	72.809	31.500	-/-	VESA - 480 - 72Hz
640 x 480	37.500	75.000	31.500	-/-	VESA - 480 - 75Hz
720 x 400	31.469	70.087	28.322	-/+	VESA-400-TEXT
800 x 600	35.156	56.250	36.000	+/+	SVGA
800 x 600	37.879	60.317	40.000	+/+	VESA-600-60 Hz
800 x 600	48.077	72.188	50.000	+/+	VESA-600-72 Hz
800 x 600	46.875	75.000	49.500	+/+	VESA-600-75 Hz
832 x 624	49.725	74.55	57.2832	-/-	APPLE MAC-800
1024 x 768	48.363	60.004	65.000	-/-	XGA
1024 x 768	53.964	66.132	71.664	+/+	COMPAQ-XGA
1024 x 768	56.476	70.069	75.000	-/-	VESA-768-70 Hz
1024 x 768	60.023	75.029	78.750	+/+	VESA-768-75 Hz
1024 x 768	60.04	75.02	80.00	-/-	APPLE MAC-768
1280 x 1024	63.981	60.020	108	+/+	SXGA
1280 x 1024	79.976	75.025	135	+/+	SXGA

Note: 1.*When the in put display mode is not 1280 x 1024, the image is smoothly expanded to 1280 x 1024 dots with the PW164 scaling engine. After expansion from 650x350, 640x400, 640x480, 720x400, 832x624, 800x600, and 1024x768 resolution, the text may look not so sharp, and the Graphics may look not so proportional.*

2. 640x400 56Hz and 1024x768 66Hz modes cannot be supported when Digital (TMDS) input.

Troubleshooting

This LCD Monitor has pre-adjusted using factory standard VGA timings. Due to the output timing differences among various VGA cards in the market, users may initially experience an unstable or unclear display whenever a new display mode or new VGA card is selected.

Attention

This LCD Monitor Supports Multiple VGA Modes.
Refer to the Standard Timing Table for a listing of modes supported by this LCD Monitor.

PROBLEM Picture is unclear and unstable

The picture is unclear and unstable, please perform the following steps :

1. Enter PC to "Shut Down Windows" status while you're in MS-Windows environment.
2. Check the screen to see if there's any black vertical stripes appear. If there are, take advantage of the "Clock" function in OSD menu and adjust (by increment or decrement numbers) until those bars disappear.
3. Move to "Phase" function in OSD menu again and adjust the monitor screen to its most clear display.
4. Click "No" on "Shut Down Windows" and back to the normal PC operating environment.

PROBLEM There is no picture on LCD Monitor

If there's no picture on the LCD Monitor, please perform the following steps:

1. Make sure the power indicator on the LCD Monitor is ON, all connections are secured, and the system is running on the correct timing. Refer to Chapter 3 for information on timing.
2. Turn off the LCD Monitor and then turn it back on again. If there is still no picture, press the Adjustment Control button several times.
3. If step 2 doesn't work, connect your PC system to another external CRT. If your PC system Functions properly with a CRT Monitor but it does not function with the LCD Monitor, the output timing of the VGA card may be out of the LCD's synchronous range. Please change to an alternative mode listed in the Standard Timing Table or replace the VGA card, and then repeat steps 1 and 2.

PROBLEM There is no picture on LCD Monitor

If you have chosen an output timing that is outside of the LCD Monitor's synchronous range (Horizontal: 24 ~ 80 KHz and Vertical: 56 ~ 75 Hz), the OSD will display a "***Out of Range***" message. Choose a mode that is supported by your LCD Monitor.

Also, if the signal cable is not connected to LCD monitor at all or properly, the monitor screen will display a message "***No***

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Input Signal".

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